

REMARKS**I. General**

The issues outstanding in the instant application are as follows:

- Claims 13-15, 17, 18 and 20 stand rejected under 35 U.S.C. 102(b) as anticipated by Tzu, U.S. Pat. No. 6,093,507 (hereinafter TZU);
- Claims 1-4, 6, 7 and 9 stand rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of Kurihara et al., U.S. Pat. No. 6,200,711 (hereinafter KURIHARA);
- Claim 5 stands rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and further in view of Rolson, U.S. Pat. No. 6,057,065 (hereinafter ROLSON);
- Claims 8 and 10-12 stand rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and further in view of Rolson, U.S. Pat. No. 5,376,483 (hereinafter ROLFSON);
- Claim 16 stands rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of ROLSON;
- Claims 19 and 21-23 stand rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of ROLFSON;
- Claims 24-27, 29, 30, 32, 36-54 and 59-69 stand rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and further in view of Laming et al., U.S. Pat. No. 6,459,705 (hereinafter LAMING);
- Claim 28 stands rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and LAMING and further in view of ROLSON; and
- Claims 31, 33-35 and 55-58 stand rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and LAMING further in view of ROLFSON.

The rejections of claims 1 through 12 and 26 are now moot in light of cancellation of these claims above. Independent claims 13, 24 and 53 have been amended above and dependent claims 14, 19, 21, 23, 25, 27, 28, 29, 31, 33, 34, 35, and 54 through 57 are amended above to conform with the respective amended independent claims. Support for these amendments can be found in FIGURE 2, and in the description of FIGURE 2 appearing in the paragraph beginning on line 17 of page 11 of the present specification. In FIGURE 2 pixels 205, 206 and 208 are shown displaced, parallel to fiber axis direction 209, from the lateral edges of the bars of the mask which are disposed transverse to fiber axis direction 209. Applicant hereby traverses the outstanding rejections of the claims, and request reconsideration and withdrawal of the outstanding rejections in light of the amendments and remarks contained herein. Claims 13 through 25 and 27 through 69 are currently pending in this application.

II. Rejection under 35 U.S.C. §102(b)

Claims 13-15, 17, 18 and 20 are rejected under 35 U.S.C. §102(b) as being anticipated by TZU. Applicant respectfully traverses this rejection.

The recited reference does not teach all limitations of the claims, as amended.

It is well settled that to anticipate a claim, the reference must teach every element of the claim, see M.P.E.P. §2131. Moreover, in order for a prior art reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, “[t]he elements must be arranged as required by the claim,” see M.P.E.P. § 2131, citing *In re Bond*, 15 US.P.Q.2d 1566 (Fed. Cir. 1990). Furthermore, in order for a prior art reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, “[t]he identical invention must be shown in as complete detail as is contained in the . . . claim,” see M.P.E.P. § 2131, citing *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989). Applicant respectfully asserts that the rejection does not satisfy at least these requirements in regard to claims 13-15, 17, 18 and 20, particularly in light of the amendments to independent claim 13.

It is respectfully requested that the Examiner takes into consideration the amendments made to claim 13, which are believed to alleviate all of the Examiner’s objections. Claim 13, as amended defines “each of the bars have substantially regular lateral edges contiguous to said spaces” and “at least one bar includes at least one predetermined irregularity on at least

one lateral edge.” Claim 13 has been amended to recite that each of the bars of the array of the phase mask has a predetermined irregularity on a lateral edge thereof, the lateral edges being defined as those contiguous to the spaces of the array.

Applicant believes that claim 13, as amended, clearly distinguishes over the teachings of TZU. As the Final Office Action points out in response to Applicant’s earlier arguments, “the irregularities of Tzu are variations in depth or thickness,” not disposed on the sides (lateral edges) of the bars. These differences result in the irregularities of the respective optical masks providing different functions. In the case of the present invention, the irregularities on the lateral edges of the bars enable fabrication of a fiber bragg grating that has a better resolution than with a non-modified mask through an averaging effect of the variations in the location of the written index modulation. For clarification please see lines 11 through 16 of page 11 of the present specification. By contrast, TZU provides irregularities on the top of the bars of the masks to generate a phase shifting of the masks therethrough, which initiates a wave cancelling effect.

Applicant respectfully asserts that for the above reasons independent claim 13, as amended, is patentable over the 35 U.S.C. §102 rejection of record and the Examiner is respectfully requested to withdraw his rejection of independent claim 13. Furthermore, there are great differences between claim 13, particularly as amended, and the prior art of record, and a person of ordinary skill in the art considering the prior art would not find these differences obvious.

Claims 14, 15, 17, 18 and 20 ultimately depend from base independent claim 13, and thus inherit all limitations of claim 13, as amended. Therefore, each of claims 14, 15, 17, 18 and 20 now set forth features and limitations not recited by TZU. Thus, Applicant respectfully asserts that for at least the reasons cited above, in answer to the rejection of claim 13, claims 14, 15, 17, 18 and 20 are patentable over the 35 U.S.C. §102 rejection of record.

III. Rejections under 35 U.S.C. §103(a)

As noted above, due to cancellation of claims 1 through 12 and 26, the rejections of claims 1 through 12 and 26 as obvious under 35 U.S.C. §103(a) are moot. However, Claim 16 remains rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of ROLSON. Claims 19 and 21-23 stand rejected under 35 U.S.C. §103(a) as unpatentable over TZU in

view of ROLFSON. Claims 24, 25, 27, 29, 30, 32, 36-54 and 59-69 remain standing rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and further in view of LAMING. Claim 28 stands rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and LAMING, and further in view of ROLFSON. Finally, claims 31, 33-35 and 55-58 stand rejected under 35 U.S.C. §103(a) as unpatentable over TZU in view of KURIHARA and LAMING, and further in view of ROLFSON. Applicant respectfully traverses these rejections in light of the claim amendments presented above, particularly the amendments to independent claims 13, 24 and 53.

A Prima Facie case of obviousness has not been established.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. See M.P.E.P. §2143. Without conceding the first or second criteria, Applicant asserts that the rejection does not satisfy the third criteria, particularly in light of the amendments to independent claims 13, 24 and 53.

The recited combinations do not teach or suggest all amended claim limitations.

The Office Action admits that TZU does not teach various elements found in original claims 16, 19, 21-25 and 27-69. The Office Action attempts to cure these deficiencies by introducing various references and combinations of references including KURIHARA, ROLFSON, ROLFSON and LAMING, which the Office Action alleges to teach singularly or in combination as having the elements absent from TZU. However, these combinations, as presented, do not teach or suggest all limitations of the claimed invention.

Base independent claims 13, 24 and 53, as amended, all define limitations such as “each of the bars have substantially regular lateral edges contiguous to said spaces” and “at least one bar includes at least one predetermined irregularity on at least one lateral edge.” As pointed out above in addressing the anticipation rejection of claim 13, TZU does not disclose these limitations. KURIHARA, ROLFSON, ROLFSON or LAMING are not relied on by the

Office Action in the various combinations presented as disclosing these limitations. Therefore, the various combinations of references do not teach all elements of the claimed invention.

Claims 2-12, 16, 19, 21-23, 25, 27-52 and 54-69 ultimately depend from respective base independent claims 13, 24 and 53, and thus inherit all limitations of their respective base claims, as amended. Therefore, for at least the reasons advanced above in answering the anticipation rejection of claim 13 and the obviousness rejections of claims 13, 24 and 53, each of claims 2-12, 16, 19, 21-23, 25, 27-52 and 54-69 set forth features and limitations not recited by the various combinations of TZU, KURIHARA, ROLSON, ROLFSON and LAMING. Thus, Applicant respectfully asserts that, claims 2-12, 16, 19, 21-23, 25, 27-52 and 54-69 are patentable over the 35 U.S.C. § 103(a) rejections of record.

IV. Conclusion

In view of the above, each of the presently pending claims is believed to be in condition for immediate allowance. According, the Examiner is respectfully requested to pass this application to issue.

As pointed out above, this amendment accompanies an RCE. The requisite RCE Fee is dealt with in an accompanying Fee Transmittal. Applicant believes no further fee is due with this response. However, if a fee is due, please charge Deposit Account No. 06-2380, under Order No. 64626/P007US/10303011 from which the undersigned is authorized to draw. The Examiner is respectfully encouraged to contact the below listed attorney if he can be of any assistance in expediting prosecution of this Application.

Dated: February 19, 2004

Respectfully submitted,

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